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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,815	02/05/2002	Takayuki Kijima	FUK-P195942.1	6021

3624 7590 10/19/2005

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EXAMINER	
HERNANDEZ, NELSON D	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/068,815	KIJIMA ET AL.	
	Examiner	Art Unit	
	Nelson D. Hernandez	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6 and 15-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6 and 15-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/5/02 & 9/16/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claim 23** is objected to because of the following informalities: Claim 23 recites the limitation " wherein step (b) further comprises halting operation of the imaging apparatus when the supply voltage level of the power source is less than a second predetermined voltage which is lower than the first mentioned predetermined voltage". There is insufficient antecedent basis for this limitation in the claim. Step (b) is shown in claim 21 and not in claim 20. For examining purposes, claim 23 will be read as dependent upon claim 21. Appropriate correction is required.

2. **Claim 24** is objected to because of the following informalities: Claim 23 recites the limitation "further comprising returning to step (b) if the release button has not moved to the fully depressed position after completion of step (d)". There is insufficient antecedent basis for this limitation in the claim. Steps (b) and (d) are shown in claim 21 and not in claim 20. For examining purposes, claim 24 will be read as dependent upon claim 21. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6, 15-17, 25-27 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo, US Patent 5,168,364 in view of Anderson, US Patent 5,963,255.

Regarding claim 6, Kondo teaches an imaging apparatus (See figs. 3, 5, 11 and 12) having an imaging element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux in a photoelectric converting element section comprising: a sweep-out means (See fig. 5:13) for sweeping out unnecessary charge in the imaging element; an operating condition judging means (System controller 17 shown in fig. 5) for judging is a flash device (See fig. 5:25) is in use a supply voltage level; and a control means (System controller 17 with clock signal generating means 26 shown in fig. 5) for lowering a sweep-out frequency of the sweep-out means when the flash device is not in use (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose that the operating condition judging means judges a supply voltage level and that the control means lowers the sweep-out frequency of the sweep-out means when a supply voltage level is lower than a predetermined voltage.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient

voltage for the camera's minimal operating needs while maximizing the battery's useful life (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify Kondo by having a voltage sensor to measure the voltage supplied by the battery and based on said measure voltage manage the operation of the camera to lower the sweep-out frequency of the sweep-out means since in Kondo when shutting down the flash operation the sweep-out frequency decreases. The motivation to do so would have been to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

Regarding claim 15, Kondo discloses a method for operating an imaging apparatus (See figs. 3, 5, 11 and 12) having an imaging element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux in a photo electric converting element, powered by a power source, comprising the steps of: applying a sweep-out signal (Using sweep-out means shown in fig. 5:13) having a given frequency for sweeping out unnecessary charge in the imaging element; changing the frequency of the sweep-out signal to a lower frequency when the flash device is not in use (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose monitoring the power source and changing the frequency of the

sweep-out signal to a lower frequency when a supply voltage level is lower than a predetermined voltage and lies within a given voltage range.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life. Anderson also teaches configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc. and if the voltage further reaches another lower level the camera would initiate power failure shut down; see figs. 7A-7D) (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify Kondo by measuring the voltage supplied by the battery and based on said measured voltage manage the operation of the camera to disable different circuits in the camera and also to lower the sweep-out frequency of the sweep-out means since in Kondo when shutting down the flash operation the sweep-out

frequency decreases. The motivation to do so would have been to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

Regarding claim 16, Kondo discloses a method for operating an imaging apparatus (See figs. 3, 5, 11 and 12) having an imaging element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux in a photo electric converting element, powered by a power source, comprising the steps of: applying a sweep-out signal (Using sweep-out means shown in fig. 5:13) having a given frequency for sweeping out unnecessary charge in the imaging element; changing the frequency of the sweep-out signal to a lower frequency when the flash device is not in use (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose monitoring the power source and changing the frequency of the sweep-out signal to a lower frequency when a supply voltage level is lower than a first predetermined voltage and is grater than a second predetermined voltage which is less than said first predetermined voltage.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient

voltage for the camera's minimal operating needs while maximizing the battery's useful life. Anderson also teaches configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc., and if the voltage further reaches another lower level the camera would initiate power failure shut down; see figs. 7A-7D) (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify Kondo by measuring the voltage supplied by the battery and based on said measured voltage manage the operation of the camera to disable different circuits in the camera and also to lower the sweep-out frequency of the sweep-out means since in Kondo when shutting down the flash operation the sweep-out frequency decreases. The motivation to do so would have been to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

Regarding claim 17, the combined teaching of Kondo in view of Anderson as applied to claim 15 teaches preventing a sweep-out operation when the supply voltage level is less than said second predetermined voltage by teaching configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a

predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc., and if the voltage further reaches another lower level the camera would initiate power failure shut down; see figs. 7A-7D. So based on said measured voltage manage the operation of the camera to disable different circuits in the camera and also to lower the sweep-out frequency of the sweep-out means since in Kondo when shutting down the flash operation the sweep-out frequency decreases and by teaching that the camera goes to a power failure shut down after reaching certain lower level, the camera would also turn off the sweep-out operation since the camera is going to shut down (See Anderson, Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Regarding claim 25, Kondo discloses an imaging apparatus (See figs. 3, 5, 11 and 12) comprising: an imaging element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux in a photo electric converting element; a power source (A power source is inherent in Kondo to supply power to the different components in the electronic camera) for powering said imaging apparatus; a signal generator (See fig. 5:13) having a lower and a higher operating frequency for generating a sweep out signal coupled to said imaging element for sweeping out unnecessary charge from the photo electric converting element (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose control means monitoring said power source for controlling said signal generator to generate a sweep

out signal having said higher frequency when the supply voltage level is greater than a first predetermined voltage.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life. Anderson also teaches configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc., and if the voltage further reaches another lower level the camera would initiate power failure shut down; see figs. 7A-7D). So if the voltage level is over a predetermined value, the flash is activated (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify Kondo by measuring the voltage supplied by the battery and based on said measured voltage manage the operation of the camera to enable different circuits in the camera and also to increase the sweep-out frequency of the sweep-out means since in Kondo when the flash device is enabled the sweep-out

frequency is increased. The motivation to do so would have been to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

Regarding claim 26, limitations can be found in claim 25.

Regarding claim 27, limitations can be found in claim 25.

Regarding claim 32, limitations can be found in claim 25.

5. Claims 18-24 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo, US Patent 5,168,364 in view of Iida, US Patent 5,669,023 and further in view of Anderson, US Patent 5,963,255.

Regarding claim 18, Kondo discloses a method for operating an imaging apparatus (See figs. 3, 5, 11 and 12) having an imaging element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux in a photoelectric converting element powered by a power source (A power source is inherent in Kondo to supply power to the different components in the electronic camera) and having a shutter release button (Col. 16, line 66 – col. 17, line 20), comprising the step of: changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation sweep-out unnecessary charge when the flash device is not in use (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose the step of monitoring the power source responsive to operation of the shutter release button and changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation sweep-out unnecessary

charge when a supply voltage levels lower than a predetermined voltage and lies within a given voltage range.

However, Iida teaches a camera circuit (See fig. 1) for performing and controlling the performance of various camera functions, said camera comprises a release button movable to a half-depressed position and fully depressed position, wherein said camera performs a voltage check to the battery of the camera when the release button is half-depressed so as to determine if the camera is capable to perform other functions with the measured power of the battery, wherein said functions include charging the flash and distance measurement (See figs. 4 and 8; col. 1, lines 25-602; col. 2, lines 20-34; col. 3, line 6 – col. 4, line 41; col. 5, line 66 – col. 6, line 61).

Therefore, taking the combined teaching of Kondo in view of Iida as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo by having a shutter release button movable to a partially depressed position and fully depressed position; and said control means initiating a voltage check operation when said shutter release button is moved to said partially depressed position. The motivation to do so would have been to conserve power as suggested by Iida (Col. 1, lines 40-50).

The combined teaching of Kondo in view of Iida fails to teach the step of changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation sweep-out unnecessary charge when a supply voltage levels lower than a predetermined voltage and lies within a given voltage range.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life. Anderson also teaches configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc., and if the voltage further reaches another lower level the camera would initiate power failure shut down; see figs. 7A-7D) (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Iida and further in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify the method for operating the imaging apparatus by measuring the voltage supplied by the battery and based on said measured voltage manage the operation of the camera to disable different circuits in the camera and also to lower the sweep-out frequency of the sweep-out means since in Kondo when shutting down the flash operation the sweep-out frequency decreases. The motivation to do so would have been to manage the power consumption in the

camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

Regarding claim 19, the combined teaching of Kondo in view of Iida and further in view of Anderson teaches a lens mechanism and shutter for performing focusing and exposure adjustment and that said lens mechanism can be turned off after reaching certain low voltage level so as to optimize power consumption (See Anderson, fig. 2, col. 4, line 63 – col. 5, line 9; col. 9, line 41 – col. 10, line 18; col. 10, line 29 – col. 11, line 41) but fails to teach the step of changing frequency of the sweep-out frequency when the lens stop is on.

Official Notice is taken that lowering the sweep-out frequency when operating the lens stop is notoriously well known in the art for performing auto exposure, since the sweep-out frequency is changed to a lower or higher frequency depending upon the illumination level of the scene being photographed (for a low illuminated scene, the sweep-out frequency would decrease and for a high illuminated scene, the sweep-out frequency would increase so as to avoid saturating the image sensor). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the sweep-out frequency when the lens stop is in operation so as to properly expose the image sensor based on the scene illumination.

Regarding claim 20, the combined teaching of Kondo in view of Iida and further in view of Anderson as applied to claims 18 and 19 teaches lowering the frequency of sweep-out signal when the lens stop is off and the supply voltage is less than said first

predetermined voltage by teaching that when the voltage reaches the first predetermined low level, the sweep out frequency would decrease, so regardless of the state of the lens stop, either on or off, the frequency would be reduced if the voltage reaches that first predetermined low level. Grounds for rejecting claims 18 and 19, apply here.

Regarding claim 21, Kondo discloses a method for operating an imaging apparatus (See figs. 3, 5, 11 and 12) having an imaging element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux and a photo electric converting element powered by a power source (A power source is inherent in Kondo to supply power to the different components in the electronic camera) and having a shutter release button (Col. 16, line 66 – col. 17, line 20), comprising: changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation to sweep out unnecessary charge in the imaging element when the flash device is not in use (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose that the shutter release button is movable from an initial position to a partially depressed position and a fully depressed position; monitoring the power source responsive to operation of the shutter release button to said partially depressed position; changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation to sweep out unnecessary charge in the imaging element when a supply voltage level of the power source is lower than a predetermined voltage and lies within a given voltage range; monitoring a lens stop responsive to

operation of the shutter release button to the fully depressed position; and changing the frequency of the sweep-out signal to the lower frequency when the lens stop is on.

However, Iida teaches a camera circuit (See fig. 1) for performing and controlling the performance of various camera functions, said camera comprises a release button movable to a half-depressed position and fully depressed position, wherein said camera performs a voltage check to the battery of the camera when the release button is half-depressed so as to determine if the camera is capable to perform other functions with the measured power of the battery, wherein said functions include charging the flash and distance measurement (See figs. 4 and 8; col. 1, lines 25-602; col. 2, lines 20-34; col. 3, line 6 – col. 4, line 41; col. 5, line 66 – col. 6, line 61).

Therefore, taking the combined teaching of Kondo in view of Iida as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo by having a shutter release button movable to a partially depressed position and fully depressed position; and said control means initiating a voltage check operation when said shutter release button is moved to said partially depressed position. The motivation to do so would have been to conserve power as suggested by Iida (Col. 1, lines 40-50).

The combined teaching of Kondo in view of Iida fails to teach the step of b) changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation to sweep out unnecessary charge in the imaging element when a supply voltage level of the power source is lower than a predetermined voltage and lies within a given voltage range; monitoring a lens stop responsive to operation of the

shutter release button to the fully depressed position; and changing the frequency of the sweep-out signal to the lower frequency when the lens stop is on.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life. Anderson also teaches configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc., and if the voltage further reaches another lower level the camera would initiate power failure shut down; see figs. 7A-7D) (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Iida and further in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify the method for operating the imaging apparatus by measuring the voltage supplied by the battery and based on said measured voltage manage the operation of the camera to disable different circuits in the camera and also to lower the sweep-out frequency of the sweep-out means since in

Kondo when shutting down the flash operation the sweep-out frequency decreases. The motivation to do so would have been to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

The combined teaching of Kondo in view of Iida and further in view of Anderson teaches a lens mechanism and shutter for performing focusing and exposure adjustment and that said lens mechanism can be turned off after reaching certain low voltage level so as to optimize power consumption (See Anderson, fig. 2, col. 4, line 63 – col. 5, line 9; col. 9, line 41 – col. 10, line 18; col. 10, line 29 – col. 11, line 41) but fails to teach monitoring a lens stop responsive to operation of the shutter release button to the fully depressed position; and changing the frequency of the sweep-out signal to the lower frequency when the lens stop is on.

Official Notice is taken that lowering the sweep-out frequency when operating the lens stop and monitoring the lens stop responsive to fully depressing the shutter button is notoriously well known in the art for performing auto exposure, since the sweep-out frequency is changed to a lower or higher frequency depending upon the illumination level of the scene being photographed (for a low illuminated scene, the sweep-out frequency would decrease and for a high illuminated scene, the sweep-out frequency would increase so as to avoid saturating the image sensor) also it is known that monitoring the status of the lens stop when fully depressing is used for indicating status of auto exposure to change the frequency of sweep out in imaging devices. Therefore,

it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the sweep-out frequency when the lens stop is in operation so as to properly expose the image sensor based on the scene illumination.

Regarding claim 22, limitations can be found in claim 21.

Regarding claim 23, limitations can be found in claim 21.

Regarding claim 24, the combined teaching of Kondo in view of Iida and further in view of Anderson as applied to claim 21 teaches returning to changing a frequency of a sweep-out signal to a lower frequency in preparation for a sweep-out operation to sweep out unnecessary charge in the imaging element when a supply voltage level of the power source is lower than a predetermined voltage and lies within a given voltage range if the release button has not moved to the fully depressed position after changing the frequency of the sweep-out signal to the lower frequency when the lens stop is on (See Iida, figs. 4 and 8; col. 1, lines 25-602; col. 2, lines 20-34; col. 3, line 6 – col. 4, line 41; col. 5, line 66 – col. 6, line 61; see also Anderson, col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Regarding claim 33, Kondo discloses a method for operating an imaging element (See figs. 3, 5, 11 and 12) for accumulating signal charge corresponding to incident scene light flux in a photo electric converting element (See solid state image sensor 13 shown in figs. 3, 5, 11 and 12), a power source (A power source is inherent in Kondo to supply power to the different components in the electronic camera) for powering said imaging apparatus, a shutter release button (Col. 16, line 66 – col. 17, line 20), and a signal generator (See fig. 5:13) having a lower and a higher operating

frequency for generating a sweep out signal coupled to said imaging element for sweeping out unnecessary charge from the photo electric converting element, said method comprising controlling said signal generator to generate a sweep out signal having said higher frequency when the flash device is in use (Col. 7, line 36 – col. 8, line 62) but does not explicitly disclose monitoring said power source when the shutter release button is operated to a first position for controlling said signal generator to generate a sweep out signal having said higher frequency when the supply voltage level is greater than a first predetermined voltage and monitoring a condition of a lens stop responsive to operation of said shutter release button to a second position for reducing the frequency of the sweep-out signal when a lens stop is not operated and when the supply voltage level is less than said first predetermined value.

However, Iida teaches a camera circuit (See fig. 1) for performing and controlling the performance of various camera functions, said camera comprises a release button movable to a half-depressed position and fully depressed position, wherein said camera performs a voltage check to the battery of the camera when the release button is half-depressed so as to determine if the camera is capable to perform other functions with the measured power of the battery, wherein said functions include charging the flash and distance measurement (See figs. 4 and 8; col. 1, lines 25-602; col. 2, lines 20-34; col. 3, line 6 – col. 4, line 41; col. 5, line 66 – col. 6, line 61).

Therefore, taking the combined teaching of Kondo in view of Iida as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo by having a shutter release button movable to a partially

depressed position and fully depressed position; and said control means initiating a voltage check operation when said shutter release button is moved to said partially depressed position. The motivation to do so would have been to conserve power as suggested by Iida (Col. 1, lines 40-50).

The combined teaching of Kondo in view of Iida does not teach controlling said signal generator to generate a sweep out signal having said higher frequency when the supply voltage level is greater than a first predetermined voltage and monitoring a condition of a lens stop responsive to operation of said shutter release button to a second position for reducing the frequency of the sweep-out signal when a lens stop is not operated and when the supply voltage level is less than said first predetermined value.

However, Anderson teaches a camera (See fig. 1) comprising a voltage sensor (Fig. 3: 76) in the power supply unit (Figs. 1: 17 and 3: 17), wherein said voltage sensor measures the voltage supplied by the power source (Fig. 3: 74) and if the voltage supplied is below a predetermined level the camera application unit (Fig. 5: 84) shut off the power supplied to the flash unit so as to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life. Anderson also teaches configuring the camera operation depending on different voltage levels (i.e. if the voltage is below a predetermined level, the flash operation is disabled and the voltage goes below another level the camera would turn of other circuits such as signal processing units etc., and if the voltage further reaches another

lower level the camera would initiate power failure shut down; see figs. 7A-7D). So if the voltage level is over a predetermined value, the flash is activated (Col. 2, lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41).

Therefore, taking the combined teaching of Kondo in view of Iida and further in view of Anderson as a whole, it would have been obvious to one of ordinary skill in the art a the time the invention was made to modify the method for operating the imaging apparatus by measuring the voltage supplied by the battery and based on said measured voltage manage the operation of the camera to enable different circuits in the camera and also to increase the sweep-out frequency of the sweep-out means since in Kondo when the flash device is enabled the sweep-out frequency is increased. The motivation to do so would have been to manage the power consumption in the camera so as to avoid a condition where the battery is unable to provide a sufficient voltage for the camera's minimal operating needs while maximizing the battery's useful life (See Anderson, col. 2, lines 46-65).

The combined teaching of Kondo in view of Iida and further in view of Anderson teaches a lens mechanism and shutter for performing focusing and exposure adjustment and that said lens mechanism can be turned off after reaching certain low voltage level so as to optimize power consumption, also teaches reducing the frequency of sweep-out signal when the lens mechanism and shutter is off and the supply voltage is less than said first predetermined voltage by teaching that when the voltage reaches the first predetermined low level, the sweep out frequency would decrease, so regardless of the state of the lens mechanism, either on or off, the frequency would be

reduced if the voltage reaches that first predetermined low level. (See Anderson, fig. 2, col. 4, line 63 – col. 5, line 9; col. 9, line 41 – col. 10, line 18; col. 10, line 29 – col. 11, line 41) but fails to teach monitoring a condition of a lens stop responsive to operation of said shutter release button to a second position.

Official Notice is taken that reducing the sweep-out frequency when operating the lens stop and monitoring the lens stop responsive to fully depressing the shutter button is notoriously well known in the art for performing auto exposure, since the sweep-out frequency is changed to a lower or higher frequency depending upon the illumination level of the scene being photographed (for a low illuminated scene, the sweep-out frequency would decrease and for a high illuminated scene, the sweep-out frequency would increase so as to avoid saturating the image sensor) also it is known that monitoring the status of the lens stop when fully depressing is used for indicating status of auto exposure to change the frequency of sweep out in imaging devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the sweep-out frequency when the lens stop is in operation with the motivation of properly expose the image sensor based on the scene illumination.

6. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo, US Patent 5,168,364 in view of Anderson, US Patent 5,963,255 and further in view of Iida, US Patent 5,669,023.

Regarding claim 28, the combined teaching of Kondo in view of Anderson teaches a shutter release button (See Kondo, col. 16, line 66 – col. 17, line 20) but does not teach a first switch means operative when a shutter release button is moved to a

partially depressed position; second switch means operative when the shutter release button is moved to a fully depressed position; and said control means monitoring said power source when said first switch means is operated.

However, Iida teaches a camera circuit (See fig. 1) for performing and controlling the performance of various camera functions, said camera comprises a release button movable to a half-depressed position and fully depressed position, wherein said camera performs a voltage check to the battery of the camera when the release button is half-depressed so as to determine if the camera is capable to perform other functions with the measured power of the battery, wherein said functions include charging the flash and distance measurement (See figs. 4 and 8; col. 1, lines 25-602; col. 2, lines 20-34; col. 3, line 6 – col. 4, line 41; col. 5, line 66 – col. 6, line 61).

Therefore, taking the combined teaching of Kondo in view of Anderson and further in view of Iida as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the imaging apparatus by having a shutter release button movable to a partially depressed position and fully depressed position; and said control means initiating a voltage check operation when said shutter release button is moved to said partially depressed position. The motivation to do so would have been to conserve power as suggested by Iida (Col. 1, lines 40-50).

Regarding claim 29, The combined teaching of Kondo in view of Anderson and further in view of Iida teaches a lens mechanism and shutter for performing focusing and exposure adjustment and that said lens mechanism can be turned off after reaching certain low voltage level so as to optimize power consumption (See Anderson, fig. 2,

col. 4, line 63 – col. 5, line 9; col. 9, line 41 – col. 10, line 18; col. 10, line 29 – col. 11, line 41) but fails to teach that the control means monitors a condition of a lens stop responsive to operation of said second switch means for reducing the frequency of the sweep-out signal when the lens stop is on.

Official Notice is taken that reducing the sweep-out frequency when operating the lens stop and monitoring the lens stop responsive to fully depressing the shutter button is notoriously well known in the art for performing auto exposure, since the sweep-out frequency is changed to a lower or higher frequency depending upon the illumination level of the scene being photographed (for a low illuminated scene, the sweep-out frequency would decrease and for a high illuminated scene, the sweep-out frequency would increase so as to avoid saturating the image sensor) also it is known that monitoring the status of the lens stop when fully depressing is used for indicating status of auto exposure to change the frequency of sweep out in imaging devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the sweep-out frequency when the lens stop is in operation so as to properly expose the image sensor based on the scene illumination.

Regarding claim 30, limitations can be found in claims 25 and 28.

Regarding claim 31, the combined teaching of Kondo in view of Iida and further in view of Anderson teaches that the control means reinitiates monitoring of said power source when said second switch means is not operated after completion of a previous battery check sequence (See Iida, figs. 4 and 8; col. 1, lines 25-602; col. 2, lines 20-34; col. 3, line 6 – col. 4, line 41; col. 5, line 66 – col. 6, line 61; see also Anderson, col. 2,

lines 46-65; col. 3, line 52 – col. 4, line 20; col. 5, lines 29-42; col. 10, line 29 – col. 11, line 41). Grounds for rejecting claims 25 and 28 apply here.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Nelson D. Hernandez
Examiner
Art Unit 2612

NDHH
October 14, 2005

NGOC YEN VU
PRIMARY EXAMINER